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# Before the FEDERAL COMMUNICATIONS COMMISSION Washington, D.C. 20554

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In the Matter of:	)	FEB 2 2 2001
Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems	) ) ) )	FEDERAL COMMUNICATIONS COMMISSION OF THE SECRETARY  ET Docket No. 00-258
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To: The Commission

### **COMMENTS OF SPECTRUMLINK NETWORKS, INC.**

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February 22, 2001

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To: The Commission

#### **COMMENTS OF SPECTRUMLINK NETWORKS, INC.**

Spectrumlink Networks, Inc. ("Spectrumlink") hereby submits the following comments in response to the Notice of Proposed Rulemaking ("NPRM") in the above-captioned proceeding dealing with spectrum allocations for advanced fixed and mobile wireless services, specifically focusing on new third-generation ("3G") mobile wireless services.<sup>1</sup>

Spectrumlink is a new entrepreneurial company, based in Newark, Delaware, moving forward in the development of advanced broadband wireless services in the ITFS/MDS bands in association with ITFS and MDS licensees. Through partnerships with ITFS and MDS licensees, Spectrumlink intends to provide a diversity of advanced broadband services to the public while, at the same time, providing the advanced technological infrastructure necessary to deliver advanced distance learning services to the educational community.

<sup>1.</sup> Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Services, including Third Generation Wireless Systems, *Notice of Proposed Rulemaking*, FCC 00-455 (rel. January 5, 2001) ("NPRM").

#### INTRODUCTION AND SUMMARY

Among the bands identified for possible use by new 3G mobile service providers, the NPRM lists the 2500-2690 MHz ("2.5 GHz") and 2150-2162 MHz ("2.1 GHz") bands (together the "ITFS/MDS bands") now used by Instructional Television Fixed Service (ITFS) and Multipoint Distribution Service (MDS)<sup>2</sup> licensees. Any significant reallocation of the ITFS/MDS bands would be a public policy disaster, and would involve exactly the kind of social engineering and speculative technological judgments that the Commission has consistently, and wisely, avoided. Less than two years ago, ITFS/MDS band usage rules were extensively modernized by the Commission in MM Docket 97-217 to provide for the delivery of advanced broadband wireless services in the bands by ITFS/MDS licensees. The new rules, generally referred to as the two-way rules, were carefully crafted by the Commission to provide for the development of advanced broadband services in the bands without the need for unworkable, government mandated relocation schemes.

Even before the new two-way rules have been given fair opportunity to work, the proposed reallocation for 3G service providers would dispossess existing band licensees, now working to provide advanced wireless services, simply in order to substitute a different class of advanced service provider. If ever effectuated, it would constitute the worst form of spectrum engineering, the net result of which would be to pick one class of advanced service provider over another. Moreover, allowing 3G service providers to occupy the bands in lieu of existing ITFS and MDS advanced wireless service licensees would fly in the face of Congressional and FCC mandates to advance

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<sup>2.</sup> Multipoint Distribution Service ("MDS") and Multichannel Multipoint Distribution Service ("MMDS") will be collectively called "MDS" in these comments.

competition, promote service to rural and underserved areas, and develop educational broadband services to support the revitalization of our nation's schools.

3G service providers simply cannot be accommodated in the ITFS/MDS bands without devastating consequences to the currently ongoing development of advanced wireless services in the bands. Moreover, the forced substitution of 3G service providers in place of existing advanced service providers now licensed to use the band would be contrary to the Commission's own spectrum management and relocation policies and comprehensive Policy Statement for the utilization of spectrum for advanced services adopted in late 1999. Ample spectrum (including existing cellular, PCS and the 1755 - 1850 MHz band), not now being used for advanced wireless services, is available for the deployment of 3G mobile services. The proposal to consider the ITFS/MDS bands for 3G service providers should be immediately dropped from this proceeding.

I. Under the Telecommunications Act of 1996, the Commission's Fundamental Mandate is to Encourage the Rapid Deployment of All Enhanced Broadband Services, not just 3G Systems.

While focusing on suitable spectrum for 3G service providers, the NPRM appropriately recognizes the Commission's more fundamental responsibility under the Communications Act to facilitate the development of all advanced wireless broadband services on a reasonable and timely basis. Over the past decade, the Commission, ITFS and MDS licensees, equipment manufacturers and broadband service providers have invested substantial resources in the development of technology for the delivery of advanced broadband wireless services in the ITFS/MDS bands in association with present ITFS and MDS band licensees. These services, now being introduced on a significant scale in the market, will provide a diversity of advanced high-speed broadband services

to the American public, including advanced educational broadband services to schools and libraries which the Congress and the Commission have long sought to foster. The advanced wireless broadband services now being implemented in the ITFS/MDS bands represent a spectrum use no less important than anticipated 3G wireless mobile advanced services.

This is not a comparative-type proceeding to determine the rights of competing users to a particular band, but rather seeks to examine how the spectrum needs of both (and other) advanced services may be reasonably accommodated. Historically, the Commission has never sought to pick technological winners or losers or pre-judge the technology and services that should be made available to the American public. To attempt to do otherwise in this proceeding and substitute one class of service provider and advanced technology for another, based on nothing more than speculation about a particular class of service provider and technology, would constitute the worst form of regulatory intervention in the marketplace and government marketplace engineering.

## A. REALLOCATING THE ITFS/MDS BANDS FOR USE BY 3G SERVICE PROVIDERS WOULD HAVE ADVERSE COMPETITIVE CONSEQUENCES

In enacting the Telecommunications Act of 1996 (the "1996 Act"),<sup>3</sup> Congress established a pro-competitive national policy designed to accelerate the deployment of advanced technologies providing a diversity of reasonably priced and high quality services for the American public. The 1996 Act was intended to ensure that *all* Americans, including those in rural and underserved areas, have access to advanced telecommunications services.<sup>4</sup> In turn, the Commission has sought on many

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<sup>3.</sup> Pub. L. No. 104-104, 110 Stat. 56 (codified at 47 U.S.C. §§ 151 et seq.).

<sup>4.</sup> See 47 U.S.C. § 245(b)(2)-(3) ("Access to advanced telecommunications and information (continued...)

fronts to facilitate the expeditious rollout of broadband services and to eliminate the entrenched "last mile" bottleneck.<sup>5</sup>

As the Commission has already found, the deployment of advanced wireless services in the ITFS/MDS bands by ITFS and MDS licensees furthers these competitive goals.<sup>6</sup> For the Commission now to shift gears and reprogram the ITFS/MDS bands for use by 3G service providers would be an extremely capricious and disruptive change of mind. Slightly over one year ago, in setting forth its comprehensive spectrum management policies for advanced services for the new millennium, the Commission determined that anticipated 3G needs should be accommodated in other bands without disturbing the development of advanced services in the ITFS/MDS bands.<sup>7</sup> An abrupt change at this time would call the credibility of the Commission's spectrum management policies into serious question.

<sup>4. (...</sup>continued) services should be provided in all regions of the Nation. . . . Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas").

<sup>5.</sup> See e.g., Inquiry Concerning the Deployment of Advanced telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, Second Report, FCC 00-290 (rel. Aug 21, 2000) at ¶¶ 8, 246 ("Second Section 706 Report").

<sup>6.</sup> Two-Way Order, 13 FCC Rcd 19112, 19115 (1999).

<sup>7.</sup> Reallocation of Spectrum to Encourage the Development of Telecommunications Technologies for the new Millennium, *Policy Statement*, 14 FCC Rcd 19868 at ¶ 23 (proposing to allocate 90 MHz for 3G in the 1717-1755 MHz, 2160-2165 MHz, and 2110-2150 MHz bands) and Appendix A.

Broadband competition today is primarily limited to DSL and cable modem service, each of which have competitive and technical limitations. DSL providers must rely on the facilities of incumbent local exchange carriers (LECs) to obtain access to the unbundled loops over which they provide service to their own customers. This prevents DSL from being a true facilities based competitor. Service is also limited to distances less than 18,000 feet from the incumbent LEC's central office.<sup>8</sup>

Similarly, the widespread deployment of cable modem service faces significant limitations. Upgrading a cable system for two-way broadband service requires substantial financial investment. The cable industry by some estimates will need to spend \$21 billion to upgrade cable systems to reach roughly one half of the homes passed in the United States, and an additional \$31 billion to upgrade cable systems to reach all homes passed. It is estimated that only about 21% of homes will have cable modem service by 2004.

This leaves the wireless industry as the significant remaining competitive alternative. As one national publication recently reported, "the wireless industry has surprisingly few major players — no doubt due to the huge capital outlays required to play the wireless field." This concentrated condition requires the Commission to evaluate the competitive consequences of the allocation of

<sup>8.</sup> *See Second Report & Order*, 2000 FCC LEXIS 4411, ¶ 38-39.

<sup>9.</sup> Advanced Telecommunications in Rural America: The Challenge of Bringing Broadband Service to All Americans, Report by the National Telecommunications and Information Administration and Rural Utilities Service, page 10 (April 2000).

<sup>10.</sup> Second Report and Order at ¶ 189.

<sup>11. &</sup>lt;u>Wireless Service, The Forecast: Mostly Sunny</u>, Newsweek, February 12, 2001, p. 60.

additional spectrum for 3G spectrum users with extreme care. This is particularly true with respect to any consideration that is given to the use by 3G service providers of the ITFS/MDS bands – in which the development of competitive advanced wireless services is now well underway by ITFS/MDS licensees in partnership with new wireless entrepreneurs such as Spectrumlink.

Viewed most simply, any reallocation for new 3G service providers would pre-empt the developing new advanced wireless services in the bands and, in all likelihood, substitute the same existing major wireless entities many of whom now also dominate local telephone and cable markets. Despite the Commission's substantial efforts to encourage a diversity of competitive new entrants through the Designated Entity approach, the natural economic dynamic of the auction process invariably seems to result in the aggregation of more spectrum by the same major players. <sup>12</sup> Much more is ultimately at stake in this proceeding than an abstract regulatory change in band classification from fixed to mobile.

In Spectrumlink's view, as the advanced wireless service marketplace develops, fixed and mobile wireless services will become more directly competitive services. Within overall fixed system network architecture, for example, the developing technology holds the promise of transportable use, such as remote laptop use, which will mirror services likely to be provided by 3G mobile service providers. From the fixed service provider standpoint, realizing this technological promise does not require any change in band designation at this time. Rather, the Commission's

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<sup>12.</sup> As one observer was quoted in commenting on the recent PCS auction, "In the last 4 years, we have seen nothing but consolidation. It would be foolish to believe that this wireless auction would be anything but an arena for the largest players to become even more powerful." Communications Daily, January 29, 2001, p.3.

commitment to flexible use rules to accommodate the benefits of technological developments should be more than sufficient to accommodate the delivery of the full range of advanced wireless services that will be technically possible by fixed service providers. What is required at this time, however, is the most careful evaluation of the competitive consequences of a reallocation of all or a part of the ITFS/MDS bands for use by 3G mobile service providers – and the resulting impact on the on-going development of competitive services by new entrepreneurs like Spectrumlink working in partnership with the ITFS/MDS community.

B. REALLOCATION OF THE ITFS/MDS BANDS FOR 3G SERVICE PROVIDER USE WOULD HAVE SEVERE CONSEQUENCES ON BROADBAND EDUCATIONAL AND RURAL AREA SERVICES

Advanced fixed broadband services bring enormous benefits to the educational community. Nearly twenty years ago, the Commission found leasing of ITFS excess capacity to commercial operators to be in the public interest, and the Commission's findings are even more valid today. For years, ITFS has delivered traditional distance learning services to students throughout the United States. Today, by incorporating broadband technology, educators gain the ability to provide the educational Internet access services the 1996 Act as sought to foster as well as multimedia, interactive and other advanced distance learning services. Just as the Commission intended, the partnership between the ITFS community and advanced service providers will provide educators with a variety of technological and financial resources in the future.

Not only does the deployment of advanced fixed wireless services in the ITFS/MDS bands further the pro-competitive policy and educational goals of Congress and the Commission, it also promotes full access to information technology. The so-called "Digital Divide" in broadband access

between urban and rural America, and between affluent and poor Americans, is a well known condition of the new technological age. Recognizing that rural areas are far less likely to have access to advanced services, for example, NTIA has reported that advanced fixed wireless services in the ITFS/MDS bands afford a promising opportunity for broadband access in rural areas.<sup>13</sup> These significant benefits should not be jeopardized through the consideration of ill-conceived proposals to reallocate the ITFS/MDS bands for other uses.

II. BAND SHARING OR SEGMENTATION ARRANGEMENTS TO PERMIT NEW 3G SERVICE PROVIDERS TO USE SPECTRUM IN THE ITFS/MDS BANDS SIMPLY ARE NOT TECHNICALLY FEASIBLE

Recognizing the benefits that would be obtained through permitting ITFS and MDS licensees to provide advanced wireless services, the Commission for over four years has labored to develop a comprehensive set of forward looking service rules, commonly called the two-way rules, for the delivery of advanced fixed wireless services in the ITFS/MDS bands by ITFS and MDS licensees. As shown by the Commission's own Interim Report on the use of the 2.5 GHz band, overwhelming impediments exist to the additional use of the band by new 3G service providers in any way without fatally affecting this existing service plan and services.

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<sup>13.</sup> Advanced Telecommunications in Rural America, NTIA (April, 2000).

The FCC's Interim Report, <u>Spectrum Study of the 2500-2690 MHz Band</u> ("Interim Report"), analyzed the potential of 3G mobile services to operate on a shared basis using the same spectrum as incumbent ITFS/MDS licenses and found it to be impossible. The plain fact is that the ITFS/MDS bands are too densely populated on a nationwide basis – and particularly in populated urban areas where 3G use would be most prevelant – to support and additional and technically incompatible use. These are the basic laws of physics that all parties must respect.

Similarly, numerous technical, economic and allocation problems also preclude the possibility of dividing the 2.5 GHz band into one or more segments, with certain band segments to be reallocated for use by new 3G service providers. First, as the Interim Report recognizes, any band segmentation plan is practically impossible due to the patchwork pattern of ITFS/MDS licensing and frequency use from market to market. Even assuming a fair and logical plan were possible, any segmentation plan could only make significantly different blocks and amounts of spectrum available for both 3G and fixed broadband services in particular markets, which would not fulfill the basic need for a consistent allocation plan available nationwide.

Second, band segmentation would take spectrum away from advanced fixed wireless services and reallocate it to 3G service providers. For the ITFS/MDS community, loss of access to some spectrum now available for advanced fixed wireless services is not just a question of making do with less spectrum, but goes to the heart of overall system economic viability. The economics of service change significantly when less spectrum is available in which to provide service.

Third, as the Commission acknowledges, the legal problems associated with the auction of spectrum that to a large degree has already been auctioned are substantial. In the MDS BTA auction completed in 1996, the Commission granted certain rights with respect to the ITFS/MDS bands to auction winners paying for the spectrum rights. Any attempt to reclaim this spectrum and reauction it to 3G service providers would be highly unfair and fatally undermine public confidence in the auction process. Significantly, these legal issues are by no means limited only to the MDS spectrum within the bands, but extend in certain respects to *all* of the spectrum within the ITFS/MDS bands.

## III. RELOCATING INCUMBENTS FROM THE ITFS/MDS BAND IN ORDER TO ACCOMMODATE 3G SERVICE PROVIDERS WOULD BE AN IMPOSSIBLE AND UNNECESSARY UNDERTAKING.

# A. SUITABLE SUBSTITUTE SPECTRUM OR FAIR RELOCATION PROCEDURES SIMPLY DO NOT EXIST.

In seeking comment on the costs of relocating ITFS and MDS incumbents from ITFS/MDS bands to another area of the spectrum, the NPRM completely misses the mark.<sup>15</sup> By limiting the discussion to such tradition relocation issues as original equipment costs, the decision to retune or replace equipment, and the cost of replacement equipment, the NPRM avoids the far more substantial issues that would be involved. Not only is suitable substitute spectrum completely unavailable (a prerequisite to the use of established Commission relocation procedures), but the Commission has not even begun to suggest how such a relocation could be accomplished. Plainly, the relocation process was never designed or intended by the Commission to forcefully dispossess

<sup>14.</sup> NPRM at ¶ 64.

<sup>15.</sup> NPRM at ¶ 64.

literally thousands of incumbent licensees providing advanced wireless services to the pubic for the benefit of a different class of advanced wireless service provider.

It is beyond dispute that no block of spectrum below 3 GHz is available for the relocation of incumbents in the ITFS/MDS bands. If such a block of spectrum existed, not only would the Commission have identified it in the NPRM, but it would also be suitable for the deployment of 3G systems directly, avoiding the needless and impossible task of relocating incumbent ITFS/MDS licensees.

Nor is spectrum above 3 GHz suitable for the relocation of incumbent ITFS/MDS licensees. The inferior propagation characteristics of spectrum above 3 GHz, as the Commission has previously recognized, are simply inadequate to support nationwide advanced fixed broadband services. <sup>16</sup> Equipment designed to operate at higher frequencies is generally more expensive than lower-frequency equipment, is more limited in the number of uses the technology will support, and requires a more complex cell structure because of the shorter transmission distances.

While the Commission has on previous occasions ordered the relocation of licensees from one spectrum band to another, those procedures have been limited to far simpler situations such as the relocation of private point-to-point operations in which the only real issue concerned the replacement of equipment to operate in the same way as before with no change in basic performance characteristics at the new frequency. The Commission has never required the relocation of complex

<sup>16.</sup> See Redevelopment Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, First Report and Order and Third Notice of Proposed Rulemaking, 7 FCC Rcd 6886 at ¶ 17 (1992) ("there are no frequency allocations above 3 GHz that could readily support the requirements of MDS, which are wide-area and point-to-multipoint in nature").

multichannel, cellularized systems, or subscriber-based information delivery systems like those operating in the ITFS/MDS bands. The policy and implementation issues that would be involved are far different, ranging from compensation for intangible lost business costs to the basic question of the fairness of substituting one business competitor for another in the band. Moreover, in suggesting the use of band-clearing procedures previously adopted for fixed point-to-point incumbents as a model for the relocation of incumbent licensees in the ITFS/MDS bands, the Commission would completely ignore fundamental technical, operational, business and legal differences between ITFS/MDS licensees and the fixed microwave service incumbents for whom the model was devised.

With numerous subscriber-based systems in operation, ITFS/MDS is a far more complex environment than point-to-point operation. Quite unlike the latter, the multitude of issues that would need to be addressed in any fair relocation process make the process a practical impossibility. These include such complex matters as replication of existing service area patterns, the transition of existing customers and customer premises equipment, the loss of literally billions of dollars of research and developmental costs already invested in fixed advanced service technological development in reliance on the use of the entire ITFS/MDS bands as promised by the Commission, and the ensuing delays in the introduction of new services to the public for many years which would be bound to result. The list of differences is practically endless and, taken together, shows the folly of even attempting to apply simplistic ancillary system relocation rules to technically far more complex systems using an entirely new technology and providing services directly to the public in a competitive environment.

In this respect, to date, the forced relocation of incumbent licensees to other spectrum has always been premised on the bedrock principle that the incumbent's business activities and services provided would be unaffected in any way by the relocation. Precisely the opposite would be true, if ITFS/MDS licensees were relocated to make way for 3G service providers. Forced relocation would at best significantly disrupt, and at worst destroy, the ongoing business activities, services and current business plans of ITFS/MDS licensees and their partners. The resulting direct and intangible losses to the displaced parties and the public would be huge.

What is ultimately at stake in this proceeding is the opportunity to participate in one of the fastest growing marketplaces this country has ever known. If this opportunity now held by ITFS/MDS licensees and their partners is delayed or denied, incumbent providers of present or planned services will suffer immense "lost business opportunity" costs and, even more importantly, the public will have lost the benefit of a more vibrant and competitive marketplace. Mandatory relocation procedures for the benefit of competitive service providers were never intended to be used to achieve this end.

B. RELOCATION IS AN UNNECESSARY ALTERNATIVE AS THERE IS AMPLE SPECTRUM IN WHICH TO LOCATE 3G SERVICE PROVIDERS WITHOUT RECOURSE TO THE ITFS/MDS BANDS.

By any objective standard, there is ample spectrum in which to locate 3G services without raiding the ITFS/MDS bands. Apart from the ITFS/MDS bands, the NPRM tentatively identifies over 225 MHZ of spectrum that could be used by 3G service providers. This includes both spectrum already allocated to PCS (1850-1910/1930-1990 MHZ) which will satisfy significant 3G service

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needs through in-band migration of existing earlier generation systems to 3G and new spectrum blocks that are now in the pipeline.

At this point, predicting the exact amount of spectrum that will actually be needed for use by 3G service providers is a very uncertain science. As the Wall Street Journal recently reported,

"Phone companies thought they had seen the future in a cellular technology dubbed "3G," but now the picture has blurred.

For more than a year, telcom carriers, particularly in Europe, have extolled a promised new system known as third-generation cellular, or 3G. . . .

Now, the cost and complexity of bringing about 3G service, along with advances in the current second-generation, or 2G systems, have raised doubts.

French mobile-phone operator Bouygues Telecom SA believes that for most services, pumped-up versions of today's networks are more than adequate.

...These new 3G skeptics cite recent technical advances that allow datahungry services, such as video, to be added to the current cellphone network at a much lower cost. Upgraded 2G networks can handle '80% of all services people have been listing for 3G,' says Fraser Curley, a cellphone specialist with consulting firm Arthur D. Little. In addition, doubts have arisen about the capabilities of the 3G technology itself."<sup>17</sup>

These uncertain marketplace conditions require that the Commission carefully evaluate predicted 3G future needs, particularly including the extent to which existing 1G and 2G spectrum blocks (some of which are not even included in the estimated more than 225 MHz of spectrum available for 3G use noted above) will satisfy the needs of 3G service providers migrating from 1G and 2G services. Particularly as the rights of other spectrum users providing competitive advanced services are at stake, the Commission must act on the basis of a full, current and complete record.

Moreover, NTIA is also examing the possibility of locating 3G services within the 1755-1850 MHz band. Whether or not this entire band can be made available, the feasibility that

<sup>17.</sup> Next Generation of Cellphones Becomes Murky, Wall Street Journal, February 21, 2001, p. B1.

significant spectrum from the 1755-1850 MHz band can be made available for 3G service providers seems apparent. The 3G industry's best estimate of the amount of spectrum needed for full deployment in ten years is 160 MHz. Accordingly, the need for the Commission to change long-established course with respect to the development of advanced fixed broadband services by ITFS and MDS licensees and additionally consider reallocation of the ITFS/MDS bands for 3G service providers simply does not exist.

#### CONCLUSION

As its caption suggests, this proceeding concerns the allocation of spectrum for advanced wireless services, both fixed *and* mobile -- and not just for use by 3G service providers. Dispossessing one class of advanced wireless service in order to accommodate the needs of another makes no sense in this broader context. Yet, this would be the exact result if 3G service providers were allowed to occupy the ITFS/MDS bands. Such a result would turn logic on its head, adversely affect the delivery of advanced services to the less affluent and for educational purposes and have adverse competitive consequences. If there were a counterbalancing consideration to weigh against these compelling public interest detriments, the proposed reallocation of ITFS/MDS bands might at least be an understandable policy option for the Commission to have put on the table. But even this is not the case as ample spectrum alternatives exist to fulfill the projected needs of 3G service providers without encroaching on the provision of advanced wireless services by ITFS/MDS licensees.

18. NPRM at ¶ 26.

For these reasons, Spectrumlink urges the Commission to reaffirm its carefully developed plan, adopted in MM Docket 97-217 and incorporated into its November 1999 Principles for the Reallocation of Spectrum for New Wireless Services for the New Millennium, for the development of advanced wireless broadband services in the ITFS/MDS bands by ITFS and MDS licensees. The proposed reallocation of the bands looking toward the forced exile of existing advanced service licensees for the benefit of new 3G service providers should be promptly dismissed.

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